

2003-09

EDUCATIONAL TECHNOLOGY PLAN FOR VIRGINIA



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Foreword

The Board of Education's technology plan for Virginia has two major purposes: It presents a vision for the use of technology in schools and classrooms, and it serves as a blueprint for school divisions by identifying the necessary components of an effective technology program. The state plan is an organized, comprehensive, coordinated approach to the use of technology in teaching and learning environments. It provides the framework for the evaluation of programs and services, and guides a process for technology program development. The state plan establishes a shared vision for using technology. It sets short-term and long-term goals for technology use, and heightens the awareness of stakeholders to the value of planning for the use of technology in schools. And, most of all, the purpose of the state plan is to enhance students' academic achievement through the use of technology.

The *Educational Technology Plan for Virginia: 2003-2009* is the culmination of research, planning, and collaboration with Virginia educational technology stakeholders. The Virginia Educational Technology Advisory Committee (VETAC) and groups representing school division technology directors, school and division administrators, K-12 teachers, higher education officials, representatives of professional organizations, and members of the business community provided input into the development of the plan.

The *Educational Technology Plan for Virginia: 2003-2009* provides the strategic direction for the use of educational technology in schools and classrooms and serves as a blueprint for school

divisions as local technology plans are created. This plan capitalizes on major advances resulting from two previous plans and through its implementation ensures that students are technologically literate and able to use technology tools to expand and improve learning. The plan is designed to provide a framework that allows for local direction, scope, and timing of implementation activities, and the emergence of new technologies.

The *Educational Technology Plan for Virginia: 2003-2009* emphasizes the importance of integrating technology into instruction. Use of technological tools by teachers in classrooms will motivate and engage students, enliven instruction, extend learning beyond the school, and assist by increasing students' achievement. The plan provides the structure for the development of other components of an effective technology program: professional development, connectivity, educational applications, and accountability.

It is a strategic plan with measurable objectives or "targets." The plan will be reviewed, progress will be assessed, and appropriate updates will be made every two years by the Board of Education.

As school divisions align their local technology plans with the new state plan, all of Virginia's educators and children will have the opportunity to benefit from the impact of best practices in using educational technology in learning environments.

The plan is posted on the Department of Education Web site at <http://www.pen.k12.va.us/VDOE/Technology/>. Questions about the *Educational Technology Plan for Virginia: 2003-2009* may be directed to the Office of Educational Technology at (804) 225-2855.



Jo Lynne DeMary

Superintendent of Public Instruction





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Executive Summary

Recently ranked as one of the nation's top 10 "New Economy" states (Atkinson, 2002), Virginia stands well positioned to experience economic growth and development as a result of its investment in information technology and high-tech industries.

Virginia's leaders have prepared the state to be attractive to companies and investors by providing the technology infrastructure and skilled workforce today's businesses require. Critical to the state's ability to capitalize on this advantage is the extent to which Virginia's schools prepare the next-generation workforce for knowledge-based jobs that utilize cutting-edge information technology.

With the backing of the Governor and the General Assembly and a commitment of more than \$326 million, Virginia has made enormous advances in infrastructure, hardware, software, teaching and learning resources, professional development, and administrative applications (Davis, 2002). The *Educational Technology Plan for Virginia: 2003-2009* aims to capitalize on these advances by ensuring that all students develop the technology skills and knowledge to realize their potential as leaders in a technology-supported information economy.

As the No Child Left Behind Act of 2001 emphasizes the need to support education practices with evidence-based research, Virginia once again moves to the forefront. The research base that

supports the *Educational Technology Plan for Virginia: 2003-2009* underscores Virginia's commitment to long-range, effective, statewide integration of educational technology into teaching, learning, and school management.

Determining the Needs

In developing an educational technology plan, the Department of Education brought together key stakeholders from across the commonwealth to gather their thoughts on using technology to improve student learning and to develop a collaborative vision for Virginia. In addition, many other sources of data related to the current state of technology were reviewed. Department of Education staff and members of the Virginia Educational Technology Advisory Committee (VETAC) held a planning retreat to create a framework for developing the plan. The focus areas of integration, professional development, connectivity, educational applications, and accountability emerged from this meeting. Goals were established and focus groups were organized to develop targets, strategies, and measures of progress.

The Five Components of the Educational Technology Plan for Virginia: 2003-2009

Integration refers to the appropriate use of specific technologies as highly effective tools in facilitating learning across all levels of cognitive inquiry and development.

Professional development covers both preservice and in-service training with a specific focus on the Virginia Technology Standards for Instructional Personnel.

Connectivity includes such concerns as the development of state and school division electronic infrastructures and the supporting software and hardware that would allow all users to have equitable technical access to local, state, and worldwide educational resources.

Educational applications relate to the instructional and administrative applications that will run over the infrastructure “highway” referenced in the Connectivity element.

Accountability addresses the broad assessment of information technology and its specific value to teaching and learning environments, data management, and decision support functions related to K-12 schools.

Measuring the Progress of the Plan

Available data on the current status of technology use in Virginia public schools highlight the importance of accurate information in an organized format. To measure progress toward the desired outcomes of this *Educational Technology Plan for Virginia: 2003–2009*, structures must be put in place for the ongoing collection of data. These structures should provide for easy collection and analysis of information and ensure the consistency and accuracy of the data. Most important, the collection structures should be designed to minimize the reporting burden of stakeholders. Consistent collection and analysis of data on the evolving state of educational technology in Virginia will ensure the effective use of technology to improve student learning. In implementing this plan, divisions are encouraged to collect and utilize data to guide decisions.

Planning for Tomorrow

History reminds us that it is difficult at best to predict the future. Even so, schools must plan for the purposeful use of new and emerging technologies and the infrastructure, professional development, and resources to support them. No one can say which technologies will ultimately take root in education or how these applications will evolve, but it is important to consider the possibilities they offer. Carefully considering current trends is arguably the best way to identify and plan for future trends.

To assist school leaders in thinking beyond the

present, each of this plan’s components includes a vision scenario and a series of questions. These sections are intended to generate discussions related to future technologies and how they might be implemented in schools. They present trends that warrant consideration and incorporate current technologies that are not yet widely used. The technologies discussed are representative of broad categories of technologies that might impact schools in the not-so-distant future.

As science fiction writer William Gibson once said, “The future is here. It’s just not evenly distributed yet.”

Organization of the Plan

The *Educational Technology Plan for Virginia: 2003–2009* reflects a philosophical change in how long-range educational technology planning is viewed in the commonwealth. It holds that technology planning should be a collaborative venture by those who share a vested interest in educational technology, teaching, and learning, and that planning is an evolving process guided by data and results. As such, this plan should not be viewed as an updated planning document for a specified time period for the Virginia Department of Education and school divisions. Rather, it should mark a starting point for a dynamic, collaborative planning process.

This document identifies five essential components of a comprehensive educational technology program: integration, professional development and support programs, connectivity, educational applications, and accountability. Each component is defined and related to issues of stakeholder concern, and a rationale reflects the fundamental reasons behind the goals. The strategy for accomplishing each goal includes

- a set of **Targets**, or visions, for the use of technology in teaching and learning
- a description of the **Direct Benefit to Teaching and Learning** of each target
- a statement of the **Reality**, or current status, of the target in Virginia schools

- a description of the **Gap**, or action necessary to reach the target
- the **Progress Measures**, or the indicators, that will determine accomplishment of the goal
- **Collaborative Strategies to Meet Goal**, or a list of key actions or responsibilities that can be undertaken by the following entities, which have a vested interest in educational technology and teaching and learning:

- o **Department of Education**
- o **School Divisions**
- o **Stakeholders**

Department of Education strategies are established to provide direction for the targets. Division and stakeholder strategies represent a multitude of actions that can be taken by school divisions and other stakeholders to reach the specific targets.

This document is organized to provide support to school districts in realizing their vision for the effective use of education technologies. The targets, goals, and strategies are supported by statements of the commonwealth's needs based on available data, a review of relevant literature, an implementation plan focusing on key issues, and scenarios and questions to promote future thinking. It is important to note that the strategies are not all inclusive but rather serve as a foundation on which to build.

established among educational technology stakeholders.

5. Teachers effectively integrate instructional technology.
6. Teachers collaborate to improve and enrich instruction using technology.
7. Teachers use technology-based intervention strategies to improve student achievement.
8. Teachers understand and model the acceptable use of technology in teaching and learning.
9. Students routinely use technology in a variety of learning activities across the curriculum.
10. Students will have information literacy skills.
11. Student learning and achievement will be enhanced through the effective integration of technology.
12. Student learning and achievement will be enhanced through the use of advanced technologies.
13. Computer/Technology Standards of Learning (SOL) are fully integrated across all curriculum areas.
14. Instructional personnel meet Technology Standards for Instructional Personnel (TSIP).
15. Students meet Computer/Technology Standards of Learning (C/T SOL).

Goals and Targets

Integration

Goal 1 • Improve teaching and learning through the appropriate use of technology.

Targets

1. Administrators have a vision and plan for technology use and integration.
2. School leaders provide support for integration of technology into instruction.
3. Leaders can effectively evaluate instructional uses of educational technology.
4. Technology integration partnerships are

Goal 2 • Improve statewide equity in the implementation of technology-enhanced teaching and learning.

Targets

1. Educators and students have access to technology to support instructional goals.
2. Appropriate technology-based instructional strategies are used for students with unique needs.

Professional Development and Support Programs

Goal 1 • Establish partnerships for identifying and delivering effective technology training to assist educators as they help students achieve high academic standards.

Targets

1. Educator training programs reflect preservice course work and experiences that include effective approaches to integrating technology into K-12 education.
2. A variety of classes, training, and resources pertaining to integrating technology effectively are available for staff development.
3. Technology-related staff development offered by various entities is provided in a variety of topics and delivery methods.
4. Technology leadership activities are provided to K-12 educational technology stakeholders.

Goal 2 • Administer grant programs and financial assistance initiatives that support implementation of educational technology integration.

Targets

1. Grant programs and alternative sources of funding that support educational technology are administered.
2. Teacher education institutions, businesses, organizations, and private entities become partners in the implementation of technology-related grants focusing on technology integration.

Goal 3 • Establish and maintain instructional technologists (including site-based technology resource teachers) in school divisions.

Targets

1. Site-based instructional technologists are available to all schools.

2. Staff development models and activities that are designed for site-based instructional technologists are available for all K-12 schools.

Connectivity

Goal 1 • Ensure that all public schools have access to integrated instructional and administrative services across interoperable high-speed networks.

Targets

1. Every instructional and administrative area in every school has a sufficient number of network connections to support the high bandwidth requirements of current and future instructional and administrative applications.
2. Each school division connects all school facilities through a wide area network with sufficient bandwidth to accommodate instructional and administrative needs.
3. Each school local area network has reliable high-speed access to the Internet capable of supporting instructional and administrative applications and initiatives.
4. An integrated suite of instructional and administrative applications supported by a standards-based enterprise architecture for K-12 schools is in place.

Goal 2 • Ensure sufficient support for ongoing, reliable network operations.

Targets

1. Adequate support personnel are in place to operate and support the K-12 school technology infrastructure.
2. Support personnel for K-12 school infrastructure have appropriate technical skills.
3. School systems have customer support systems in place to address technical problems in a timely and efficient manner.
4. School divisions plan for the total cost of ownership (TCO) associated with K-12 technology.

Goal 3 • Provide leadership and resources to promote efficient procurement of infrastructure, including the identification and procurement of emerging technologies.

Targets

1. The K-12 school technology procurement process is efficient and cost effective.
2. School divisions are regularly informed about emerging technologies for instruction and administration.

Goal 4 • Ensure that school divisions have in place network security, filtering, and disaster recovery plans.

Targets

1. Policies, procedures, and technologies are in place to ensure that computing resources are secure and recoverable.
2. School divisions maintain an up-to-date Acceptable Use Policy (AUP) and effectively use network filtering solutions.
3. School divisions have appropriate and effective network and data security policies and systems.

for state data collection, warehousing, and reporting.

3. Use of a common set of data definitions allows standard communication and interpretation of student information.
4. Every school has an efficient, automated library media center connected to the Internet and networked to appropriate learning areas.
5. School divisions have strategies for providing community access to school-based technology and applications.

Goal 3 • Offer digital learning opportunities at state and local levels.

Targets

1. Web-based courses and staff development activities are provided.
2. Schools are able to receive digital television broadcast signals and effectively utilize the enhanced capabilities.

Educational Applications

Goal 1 • Improve teaching and learning through the appropriate use of network-accessible educational applications.

Targets

1. Teaching and learning resources that effectively support the Virginia Standards of Learning (SOL) have been identified, communicated, and developed.

Goal 2 • Promote and develop Web-based applications, services, and resources.

Targets

1. All schools are participating successfully in the Virginia Web-based SOL Technology Initiative.
2. School divisions use Web-based applications

Accountability

Goal 1 • Assess the value that information technology (IT) adds to teaching and learning environments.

Targets

1. Identify elements of technology integration that benefit the teaching and learning environment.
2. Readiness to integrate technology into teaching and learning has been assessed for each school.
3. Instructional technology integration has been assessed in schools and classrooms.
4. Technology-rich environments and effective technology-based instructional strategies support student learning.

Goal 2 • Provide appropriate decision support capabilities for all stakeholders.

Targets

1. Information systems provide comprehensive information about student learning progress.
2. Information systems interface to provide staff members the ability to use appropriate and effective data to make decisions.

Goal 3 • Assess information technology (IT) literacy.

Targets

1. All students are technology literate.
2. All instructional personnel are technology literate.
3. All paraprofessionals and support staff are technology literate.
4. Students meet expectations for technology utilization pertaining to their subject and grade level as described by school division technology plans.

Goal 4 • Ensure that local technology plans are consistent with the state technology plan.

Targets

1. School divisions will have technology plans that are consistent with the components of the state technology plan. All schools will have technology plans that are consistent with the components of their division technology plan.
2. All schools and school divisions will evaluate annually the progress and effectiveness of their technology plans.



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